

# Chapter 2 Review

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### 2.1 Trigonometric Ratios With Acute Angles, textbook pages 74–83

1. Solve  $\triangle DEF$ . Express all measures to one decimal place.

$$\angle F = 180 - 90 - 50 \\ = 40^\circ$$

$$\tan 50^\circ = \frac{d}{8.5}$$

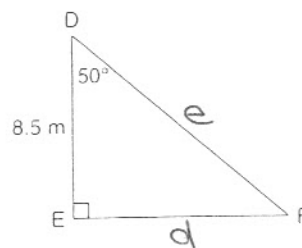
$$8.5 \tan 50^\circ = d$$

$$10.1 \text{ m} = d$$

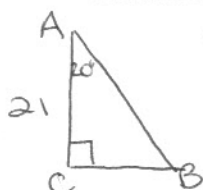
$$\cos 50^\circ = \frac{8.5}{e}$$

$$e = \frac{8.5}{\cos 50^\circ}$$

$$e = 13.2 \text{ m}$$



2. In  $\triangle ABC$ ,  $\angle C = 90^\circ$ ,  $\angle A = 20^\circ$ , and  $b = 21$  cm. Solve the triangle. Express all measures to one decimal place.



$$\angle B = 180 - 90 - 20 \\ = 70^\circ$$

$$\tan 20^\circ = \frac{a}{21}$$

$$21 \tan 20^\circ = a$$

$$7.6 \text{ cm} = a$$

$$\cos 20^\circ = \frac{21}{c}$$

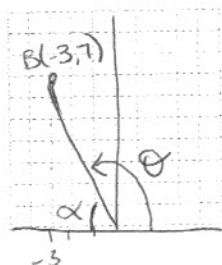
$$c = \frac{21}{\cos 20^\circ}$$

$$c = 22.3 \text{ cm}$$

### 2.2 Trigonometric Ratios With Obtuse Angles, textbook pages 84–95

3. The terminal arm of an angle,  $\theta$ , in standard position passes through  $B(-3, 7)$ .

- a) Sketch a diagram for this angle in standard position.



- b) Determine the length of  $OB$ .

$$OB = \sqrt{(-3)^2 + 7^2} \\ = \sqrt{9 + 49}$$

$$OB = \sqrt{58} \\ = 7.6$$

- c) Determine the primary trigonometric ratios to three decimal places.

$$\sin \alpha = \sin \theta = \frac{7}{\sqrt{58}}$$

$$= 0.919$$

$$\cos \alpha = -\cos \theta = \frac{-3}{\sqrt{58}}$$

$$= -0.394$$

$$\tan \alpha = -\tan \theta = \frac{7}{-3}$$

$$= -2.333$$